ABSTRACT OF THE DISCLOSURE

A Distributed Memory Computing Environment (herein called "DMCE") architecture and implementation is disclosed in which any computer equipped with a memory agent can borrow memory from other computer(s) equipped with a memory server on a distributed network. A memory backup and recovery as an optional subsystem of the Distributed Memory Computing system is also disclosed. A Network Attached Memory (herein called "NAM" or "NAM Box" or "NAM Server") appliance is disclosed as a dedicated memory-sharing device attached to a network. A Memory Area Network (herein called "MAN") is further disclosed, such a network is a network of memory device(s) or memory server(s) which provide memory sharing service to memory-demanding computer(s) or the like, when one memory device or memory server fails, its service will seamlessly transfer to other memory device(s) or memory server(s).